

Remarks

Claims 1-33 have been cancelled without prejudice or disclaimer and claims 51-83 are newly added. Support for the new claims may be found throughout the embodiments disclosed in the as-filed Specification. No new matter has been added. Accordingly, claims 34-83 are pending, of which claims 34-50 are withdrawn.

Reconsideration and allowance of the application based on the following remarks are requested.

Rejections of claims 1-33

The Office Action made the following rejections with regard to claims 1-33:

- Claims 2 and 7 were rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
- Claims 1-7, 16, 18, 21, 27 and 29-33 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 4,871,580 to Schram et al. ("Schram") in view of U.S. Patent 5,559,065 to Lauth et al. ("Lauth").
- Claims 8, 9, 13-15, 20, 22 and 23 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Schram in view of Lauth, as applied to claims 1-7, 16, 18, 21, 27, 29-33 above, and further in view of Canadian Patent No. CA 2,297,543 to Loch et al. ("Loch").
- Claims 10-12, 17, 24-26 and 28 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Schram in view of Lauth, as applied to claims 1-9, 13-16, 18, 20-23, 27 and 29-33 above, and further in view of U.S. Patent No. 4,536,482 to Garcia ("Garcia").
- Claims 19 and 20 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Schram in view of Lauth, as applied to claims 1-7, 16, 18, 21, 27 and 29-33 above, and further in view of U.S. Patent No. 3,969,082 to Cairns et al. ("Cairns").

Without conceding to the propriety of these rejections, Applicant has cancelled claims 1-33, and thus, the rejections thereof are moot.

Accordingly, withdrawal of the rejections of claims 2 and 7 under 35 U.S.C. § 112, second paragraph, and claims 1-33 under 35 U.S.C. § 103(a) should be withdrawn.

New claims 51-83

Independent claim 51 recites a method for manufacturing a mixed layer comprising, *inter alia*, the features of:

contacting the plasma with the at least one sputtering electrode to sputter the substrate with the second deposition material of the at least one electrode for depositing the second deposition material simultaneously with the first deposition material on the substrate.

Applicant submits that the cited portions of Schram, Lauth, Loch, Garcia, Cairns, or a proper combination thereof, fail to teach or otherwise render obvious these features.

For example, the cited portions of Schram do not teach or suggest "*contacting the plasma with the at least one sputtering electrode to sputter the substrate with the second deposition material* of the at least one electrode for depositing the second deposition material simultaneously with the first deposition material on the substrate."

The cited portions of Schram disclose a separate sputtering discharge source that includes both a cathode 6 (51) and an anode 18 (50) to free the solid particles reactants from the cathode. Indeed, the cited portions of Schram disclose that they "... are mixed with the plasma jet after they have been freed from the solid-phase by a sputtering discharge..." [Schram, column 5, lines 33-38; Figures 1 and 5; *see also* column 6, lines 61-65 (Again it is stated that "... the reactant material is made gas-like (by sputtering for example) and mixes with the plasma-jet."), emphasis added].

By contrast, in the claimed invention, the plasma jet of the plasma cascade source is used for sputtering the second deposition material from the electrode. As such, both the first and second deposition materials may be applied in a very uniform manner and a high

deposition rate can be achieved, without making adjustments to the voltage source. [See, e.g., Applicant's Specification, page 20, lines 16-22].

Further, even assuming, *arguendo*, that it was proper to combine Lauth, Loch, Garcia, and Cairns with Schram (which Applicant does not concede), the cited portions of Lauth, Loch, Garcia, and Cairns not overcome the deficiencies of Schram. For example, the Office Action relied upon these reference to allegedly teach other aspects of the claim invention.

Accordingly, claims 51-83 are patentable over Schram, Lauth, Loch, Garcia, and/or Cairns and should be allowed.

Conclusion

Having addressed each of the foregoing rejections, it is respectfully submitted that a full and complete response has been made to the outstanding Office Action and, as such, the application is in condition for allowance. Notice to that effect is respectfully requested.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

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